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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,118	09/26/2003	Andrew D. Flockhart	4366-106	9237
48500	7590	05/17/2007		
SHERIDAN ROSS P.C. 1560 BROADWAY, SUITE 1200 DENVER, CO 80202			EXAMINER WAI, ERIC CHARLES	
			ART UNIT 2195	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Office Action Summary</p>	Application No. 10/673,118	Applicant(s) FLOCKHART ET AL.	
	Examiner Eric C. Wai	Art Unit 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-34 are presented for examination.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "224" has been used to designate two different components in Figure 2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The follow terms lack antecedent basis in the claims:

- i. Claim 1: "the estimated wait time" and "the weighted advance time".
- ii. Claim 14, "said service location".

b. The following terms are indefinite and are not clearly understood:

- iii. "a first service location" in claims 2, 3, 6, and 7.
- iv. "a sufficient determined probability" in claim 2.
- v. "a greatest determined probability" in claim 3.
- vi. "a target time" in claims 4, 5, 15, and 34.
- vii. "a work request" in claim 8, 15, and 34.
- viii. "a service location" in claim 16.
- ix. "a predetermined target time" in claim 20.
- x. "an advance time metric" in claims 31 and 33.
- xi. "A computational component" for performing a method in claim 26.

It is unclear as to whether the component is a software module only and not stored in any computer storage media which, when executed by the computer, will execute the steps. Examiner suggests changing the computational component to a computer storage medium.

Claim Objections

5. Claims 2-3, 15, and 28 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

6. Claims 2-3 recite language already recited in Claim 1.

7. Claim 15 recites "selecting a target time for completing a work request", however, claim 1 already recites "probability of servicing said work request within said target time". Selecting a target time is already inherent in the language of claim 1.

8. Claim 28 is objected for failing to be proper dependent claim. Claim 28 depends off claim 29. However Claims 29 depends off claim 28. For purposes of examination, claim 28 will be interpreted to depend off claim 26. Appropriate correction is required.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 16-19, and 20-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

11. Claims 16 and 20 recite an apparatus; however, it appears that the system would reasonably be interpreted by one of ordinary skill in the art as software per se, failing to be tangibly embodied or include any recited hardware as part of the system.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1-7, 13-18, and 20-28 rejected under 35 U.S.C. 102(e) as being anticipated by Le Grand (US Pat No. 6,487,290).

14. Regarding claim 1, Le Grand teaches a method for balancing resource loads, comprising:

receiving a work request (col 1 line 59, "incoming call");

determining for each of a plurality of service locations a probability of servicing said work request within a target time (col 2 lines 34-36, "evaluating the current availability" and col 4 lines 17-29, wherein a target time must be calculated in order to determine a probability of delay);

selecting at least a first service location having at least one of a greatest determined probability of servicing said work request within said target time and a sufficient determined probability of servicing said work request within said target time; and assigning said work request to said selected service location (col 2 lines 41-50).

15. Regarding claim 2, Le Grand teaches that said step of selecting at least a first service location comprises selecting at least a first service location having a sufficient determined probability of servicing said work request within said target time (col 4 lines 22-29).

16. Regarding claim 3, Le Grand teaches that said step of selecting at least a first service location comprises selecting at least a first service location having a greatest determined probability of servicing said work request within said target time (col 4 lines 22-29).

17. Regarding claim 4, Le Grand teaches that said step of determining for each of a plurality of service locations a probability of servicing said work request within a target time comprises determining a relative probability of servicing said work request within a target time (col 4 lines 22-29).

18. Regarding claim 5, Le Grand teaches that said probability of servicing said work request within a target time is determined for a service location by calculating a number of opportunities to service said work request within said target time by said service location (col 5 lines 17-23, wherein the shortest queue length is indicative of a number of opportunities).

19. Regarding claim 6, Le Grand teaches that selecting at least a first service location comprises selecting at least a first service location having at least a selected minimum number of opportunities to service said work request within said target time (col 4 lines 56-63, wherein the agents need to be qualified).

20. Regarding claim 7, Le Grand teaches the step of selecting at least a first service location comprises selecting at least a first service location having a greatest number of opportunities to service said work request within said target time (col 5 lines 17-23, wherein the agent with the shortest queue is indicative of the greatest number of opportunities).

21. Regarding claim 13, Le Grand teaches that each of said service locations is associated with a queue capable of containing a plurality of work requests (col 4 lines 17-25).

22. Regarding claim 14, Le Grand teaches that said service location comprise at least one split (col 4 line 17, "group of agents").

23. Regarding claim 15, Le Grand teaches selecting a target time for completing a work request (col 4 lines 17-29, wherein a target time must be calculated in order to determine a probability of delay).

24. Regarding claim 16, it is the apparatus claim of claim 1 above. Therefore, it is rejected for the same reasons as claim 1 above.

25. Regarding claim 17, Le Grand teaches that said service location is associated with a queue and comprises at least one associated resource (col 2 lines 46-49 and col 4 lines 17-18).

26. Regarding claim 18, Le Grand teaches that said service location comprises a split (col 4 line 17, "group of agents").

27. Regarding claim 20, Le Grand teaches a work allocation apparatus, comprising:

- a plurality of service locations (col 2 lines 1-5);
- a plurality of service resources, wherein at least a one of said service resources is associated with each of said service locations (col 2 lines 46-49).
- a communication network interface, operable to receive work requests (col 2 lines 29-32, wherein it is inherent that a network interface exists); and
- a controller, wherein a work request received at said communication network interface is assigned to a service location having at least one of a highest probability of servicing said work request within a predetermined target time and a sufficient probability of servicing said work request within a predetermined target time (col 2 lines 41-49).

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28. Regarding claim 21, Le Grand teaches that said service resources comprise service agents (col 1 lines 66-67).

29. Regarding claim 22, Le Grand teaches that said service resources are organized into splits (col 4 line 17, "group of agents").

30. Regarding claim 23, Le Grand teaches that said work request is associated with a request for assistance (col 1 lines 19-33, wherein the work is associated with a call).

31. Regarding claim 24, Le Grand teaches that said communication network interface is interconnected to at least one of an Internet protocol network and a public switched telephone network (col 1 lines 19-33, wherein calls are distributed).

32. Regarding claim 25, Le Grand teaches that said service locations each comprise a server (abstract, wherein it is inherent that calls be handled by some sort of server).

33. Regarding claims 26-28, they are the apparatus claims of claims 1, and 4-5. Therefore, they are rejected for the same reasons as claims 1, and 4-5

Claim Rejections - 35 USC § 103

34. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

35. Claims 8-12, 19, and 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Grand in view of Costantini et al. (US Pat No. 5,506,898).

36. Costantini was disclosed on IDS dated 12/14/2006.

37. Regarding claim 8, Le Grand does not teach that said number of opportunities (#OPPS) is calculated as $\text{\#OPPS} = ((\text{Target time} - \text{EWT}) / \text{WAT}) + 1$, where EWT is the estimated wait time for a work request assigned to said service location, and where WAT is the weighted advance time for a work request assigned to said service location.

38. Costantini teaches the use of an average rate of advance in determining the estimated wait time in a queue (Fig 5, 502 and 504).

39. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the use a measure such as a weighted advance time or average rate of advance in determining the number of opportunities or estimated wait time. One would be motivated by the desire to produce a more accurate estimate of how long an item would or will have to wait in a particular queue before being serviced as evidenced by Costantini (col 2 lines 4-10).

40. Regarding claims 9-10, Le Grand does not teach calculating an advance time metric or that the advance time metric comprises an expected wait time, wherein said step of selecting comprises selecting a location having a lowest expected wait time.

41. Costantini teaches the use of an average rate of advance in determining the estimated wait time in a queue (Fig 5, 502 and 504).

42. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the use a measure such as a weighted advance time or average rate of advance in determining the estimated wait time. One would be motivated by the desire to produce a more accurate estimate of how long an item would or will have to wait in a particular queue before being serviced as evidenced by Costantini (col 2 lines 4-10).

43. Regarding claim 11, Costantini teaches that said advance time metric comprises a weighted advance time trend, wherein said step of selecting comprises selecting a location having a lowest weighted advance time trend (Fig 3, 302).

44. Regarding claim 12, Costantini teaches that said weighted advance time trend (WAT_Trend) is calculated as $WAT_Trend_n = (x * WAT_Trend_{sub.n-1}) + ((1-x) * WAT_Change)$, where x is a constant, and where the WAT_Change is calculated as $WAT_Change = (WAT_{sub.n} - WAT_{sub.n-1}) / WAT_{sub.n-1}$ (Fig 3, 302).

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45. Regarding claim 19, it is the apparatus claim of claim 9 above. Therefore, it is rejected for the same reasons as claim 9 above.

46. Regarding claims 29-34, they are the apparatus claims of claims 8-9, 11-12, and 15. Therefore, they are rejected for the same reasons as claims 8-9, 11-12, and 15.

Conclusion


47. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric C. Wai whose telephone number is 571-270-1012. The examiner can normally be reached on Mon-Thurs, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng - Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EW


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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Continuation of Attachment(s) 3. Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date : 9/26/03; 1/29/04; 1/25/05; 2/18/05; 12/14/06.